

[illegible]

The screenshot shows the 'USACE LA Division Annual Maintenance' software interface. The window title is 'LA DIVISION'. The interface is divided into several sections:

- Setup Panel (Left):** Contains icons for 'View', 'Edit', 'Print', and 'Help'. Below these is a 'Time Information' section with a 'Time' button.
- Project Information Section:**
  - Project Name:** LA DIVISION
  - Project Number:** 1000000000
  - Project Date:** 10/10/10
- Default Path Section:**
  - Path:** C:\Program Files\USACE\LA Division\Annual Maintenance\
  - Buttons:** 'Default Path' and 'Print'.
- Bottom Panel:** Contains a 'File' menu and a 'Print' button.

Base Data USACE LA Division Annual Maintenance

Item	Unit	Quantity	Unit Price	Total Price
1.00	1.00	1.00	1.00	1.00
2.00	2.00	2.00	2.00	4.00
3.00	3.00	3.00	3.00	9.00
4.00	4.00	4.00	4.00	16.00
5.00	5.00	5.00	5.00	25.00
6.00	6.00	6.00	6.00	36.00
7.00	7.00	7.00	7.00	49.00
8.00	8.00	8.00	8.00	64.00
9.00	9.00	9.00	9.00	81.00
10.00	10.00	10.00	10.00	100.00
11.00	11.00	11.00	11.00	121.00
12.00	12.00	12.00	12.00	144.00
13.00	13.00	13.00	13.00	169.00
14.00	14.00	14.00	14.00	196.00
15.00	15.00	15.00	15.00	225.00
16.00	16.00	16.00	16.00	256.00
17.00	17.00	17.00	17.00	289.00
18.00	18.00	18.00	18.00	324.00
19.00	19.00	19.00	19.00	361.00
20.00	20.00	20.00	20.00	400.00
21.00	21.00	21.00	21.00	441.00
22.00	22.00	22.00	22.00	484.00
23.00	23.00	23.00	23.00	529.00
24.00	24.00	24.00	24.00	576.00
25.00	25.00	25.00	25.00	625.00
26.00	26.00	26.00	26.00	676.00
27.00	27.00	27.00	27.00	729.00
28.00	28.00	28.00	28.00	784.00
29.00	29.00	29.00	29.00	841.00
30.00	30.00	30.00	30.00	900.00
31.00	31.00	31.00	31.00	961.00
32.00	32.00	32.00	32.00	1024.00
33.00	33.00	33.00	33.00	1089.00
34.00	34.00	34.00	34.00	1156.00
35.00	35.00	35.00	35.00	1225.00
36.00	36.00	36.00	36.00	1296.00
37.00	37.00	37.00	37.00	1369.00
38.00	38.00	38.00	38.00	1444.00
39.00	39.00	39.00	39.00	1521.00
40.00	40.00	40.00	40.00	1600.00
41.00	41.00	41.00	41.00	1681.00
42.00	42.00	42.00	42.00	1764.00
43.00	43.00	43.00	43.00	1849.00
44.00	44.00	44.00	44.00	1936.00
45.00	45.00	45.00	45.00	2025.00
46.00	46.00	46.00	46.00	2116.00
47.00	47.00	47.00	47.00	2209.00
48.00	48.00	48.00	48.00	2304.00
49.00	49.00	49.00	49.00	2401.00
50.00	50.00	50.00	50.00	2500.00



Base Data USACE LA Division Annual Maintenance

Item	Description	Unit	Quantity	Unit Price	Total Price
1	MAINTENANCE	EA	1	2000	2000
2	MAINTENANCE	EA	1	2000	2000
3	MAINTENANCE	EA	1	2000	2000
4	MAINTENANCE	EA	1	2000	2000
5	MAINTENANCE	EA	1	2000	2000
6	MAINTENANCE	EA	1	2000	2000
7	MAINTENANCE	EA	1	2000	2000
8	MAINTENANCE	EA	1	2000	2000
9	MAINTENANCE	EA	1	2000	2000
10	MAINTENANCE	EA	1	2000	2000

Base Data USACE LA Division Annual Maintenance

Item	Description	Unit	Quantity	Unit Price	Total Price	Notes
1	Base Data					
2	Base Data					
3	Base Data					
4	Base Data					
5	Base Data					
6	Base Data					
7	Base Data					
8	Base Data					
9	Base Data					
10	Base Data					
11	Base Data					
12	Base Data					
13	Base Data					
14	Base Data					
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84	Base Data					
85	Base Data					
86	Base Data					
87	Base Data					
88	Base Data					
89	Base Data					
90	Base Data					
91	Base Data					
92	Base Data					
93	Base Data					
94	Base Data					
95	Base Data					
96	Base Data					
97	Base Data					
98	Base Data					
99	Base Data					
100	Base Data					

USACE LA Division Annual Maintenance

Task/Sites	Task Name	Frequency	Due Date	Status	Remarks
1	Annual Inspection	1	1/1/2020	Completed	
2	Annual Inspection	1	2/1/2020	Completed	
3	Annual Inspection	1	3/1/2020	Completed	
4	Annual Inspection	1	4/1/2020	Completed	
5	Annual Inspection	1	5/1/2020	Completed	
6	Annual Inspection	1	6/1/2020	Completed	
7	Annual Inspection	1	7/1/2020	Completed	
8	Annual Inspection	1	8/1/2020	Completed	
9	Annual Inspection	1	9/1/2020	Completed	
10	Annual Inspection	1	10/1/2020	Completed	
11	Annual Inspection	1	11/1/2020	Completed	
12	Annual Inspection	1	12/1/2020	Completed	

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**Tasks/Sites**

USACE LA Division Annual Maintenance

File Edit View Print Help

Site: Santa Fe Dam

Task: 10100000

Task Name	Frequency	Due Date	Status	Assigned To
General Inspection	Annual	10/1/00	Not Started	John Doe
Safety Inspection	Annual	10/1/00	In Progress	Jane Smith
Training	Annual	10/1/00	Completed	John Doe
Equipment Maintenance	Annual	10/1/00	Not Started	Jane Smith
Personnel Training	Annual	10/1/00	In Progress	John Doe

**Assignment** USACE LA Division Annual Maintenance

Assignment Number: [ ]

Assignment Name: [ ]

Assignment Type: [ ]

Assignment Status: [ ]

Assignment Date: [ ]

Assignment Location: [ ]

Assignment Description: [ ]

Assignment Details: [ ]

Assignment Notes: [ ]

Assignment History: [ ]

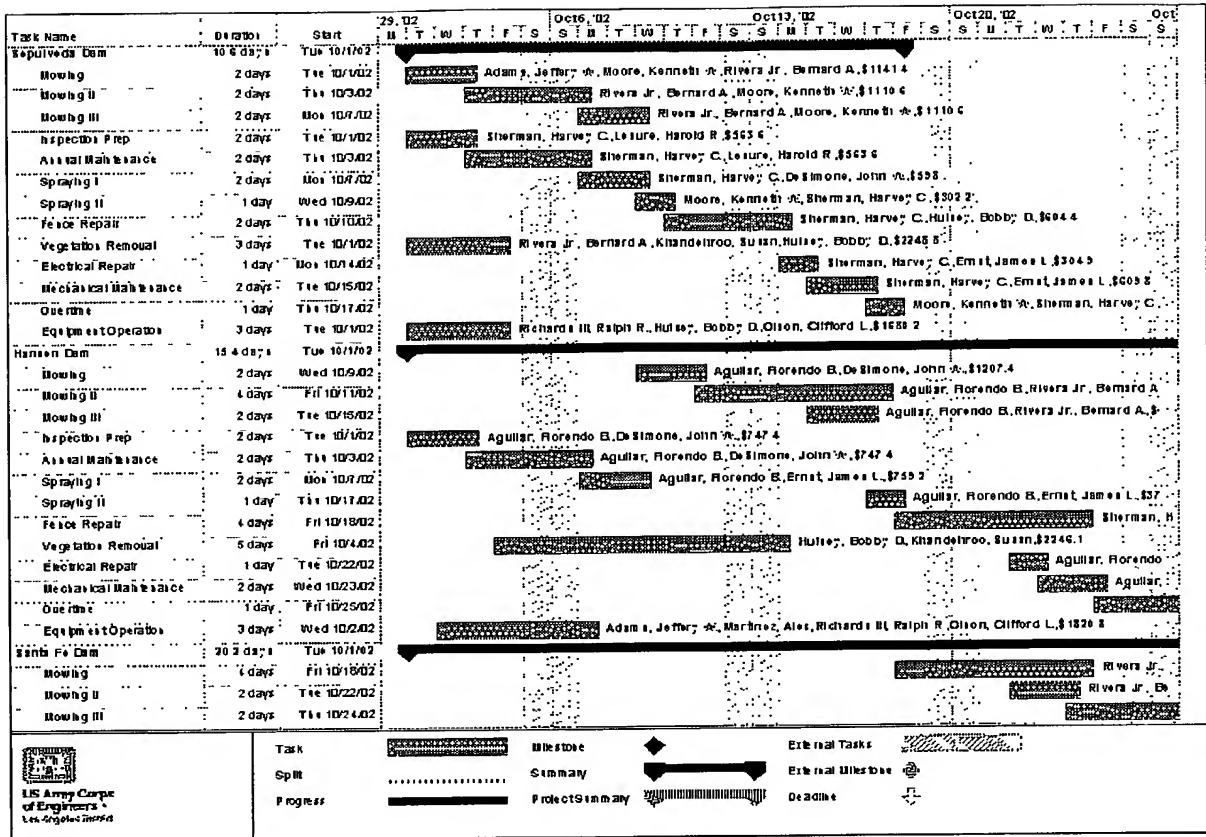
Assignment Actions: [ ]

Assignment Summary: [ ]

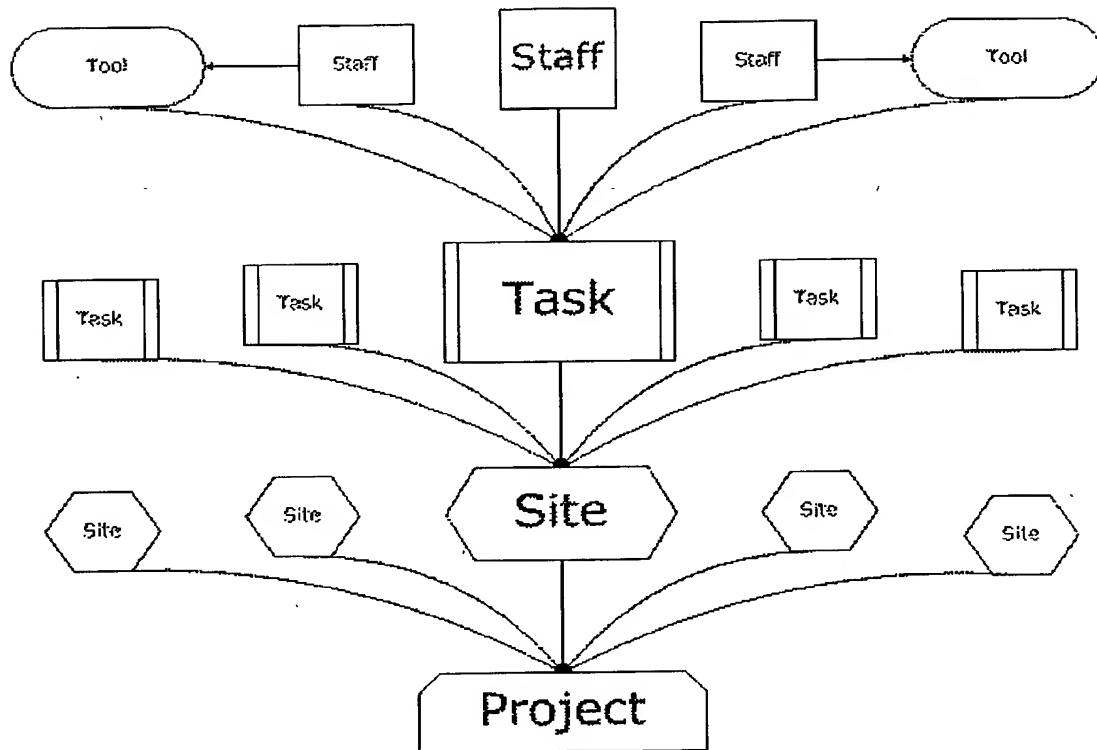
Assignment Footer: [ ]







## Relationship Between Staff/Tool/Task/Site



```
// This class allows for sorting based on scores
// without losing track of the original object
class ObjScore
{
public:
    int id;
    int score;
}

void GetStaffList(Task* t, Array<Personel*> &list)
{
    // Get All the Staff who can do this task
    // and put it in the array "list"
    GetAllSkilledStaff(t, list)

    // Make an array of score objects
    // the size of "list"
    Array<ObjScore> scores(list.length())

    for(i=0;i<list.length();i++)
    {
        // Give this person's ID to the score object
        scores[i].id = list[i]->id

        // Make this score affected by the staff's cost
        // It is negative to show that the higher the cost,
        // the worse the score. Multiply it by some factor
        // based on the specified criteria
        scores[i].score = -(factor) * list[i]->cost

        // Make this score affected by the number of days
        // worked by the staff already. This is multiplied
        // by a work-distribution factor. If the user chooses
        // to spread work evenly, then the less-worked staff
        // will be given a higher score
        scores[i].score += (factor) * DaysWorked(list[i])
    }

    // Sort the list based on score. This uses the quicksort
    // sorting method, with modifications to take a list of
    // ObjScore and not numbers
    OSQuickSort(os,0,os.length()-1)

    // Now make the list reflect the newly ordered list of
    // scores
    for(i=0;i<list.length();i++)
        list[i] = GetStaffFromID(scores[i].id)
}
```

```
// Shows how these resources are inter-connected

// Basic Resource Category
class Resource
{
public:
    int id; // ID number to identify resource
    TString name; // Name of Tool / Staff
    TArray<RescTask*> tasks; // List of Tasks and days
    float cost; // Resc Rate
    bool useresc; // Is this resource available
    TArray<Absence*> abs; // List of absence Dates

    Resource();
};

// Tool Resource
class Tool : public Resource
{
public:
    TArray<int> tooldelet; // List of tool categories this
                          // tool falls into

};

// Staff Resource
class Personnel : public Resource
{
public:
    TArray<int> skillno; // Skill's this staff has
    TString contact, comment; // Contact info and comments
    TArray<RescTask*> tendering; // Which site/dates this staff
    float ovrate; // Tenders for
    // Overtime Rate

    Personnel();
};

class Site
{
public:
    TString name; // Name of Site
    int id; // Site ID (For searching/saving)
    TArray<Group*> groups; // Groups (of Tools and Staff) that
                          // can work at this site
    TArray<Personnel*> tenders; // Possible Site tenders
    TArray<Task*> tasks; // Tasks occurring at this site
    TArray<Site*> sub; // Sub-sites of this site
    TArray<TaskPers*> curtender; // Tenders and Dates of Tendering

    bool closed; // Is this site closed down forever
    TArray<Absence*> abs; // Site closures

    TArray<SiteTask*> st; // Site/Task Linkage

    Site();
};

class Task
{
public:
    SiteTask* st; // Site/Task Linkage
    Site* site; // Site where this Task takes place
    TArray<TaskPers*> personnel; // List of staff/days working on
    TArray<TaskPers*> ovr; // List of overtime staff
    TArray<TaskPers*> ovr2; // List of too s/days
    int start, end; // Task's start and end dates

    Task();
};
```